

**ISTeC**



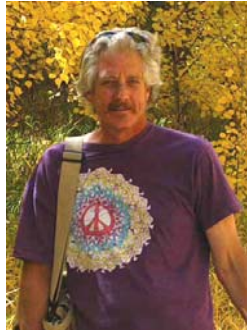
**Colorado  
State  
University**

**The Information Science & Technology Center**

***ISTeC.ColoState.edu***

**Colorado State University's  
Information Science and Technology Center (ISTeC)**

***Presents***



**Dr. Tim Starkweather**  
**Second Sight Medical Products**

## **ISTeC Special Lecture**

**in conjunction with the  
Electrical and Computer Engineering Department and  
Computer Science Department Seminar Series**

# **“Neural Stimulation Using Implantable Devices: Auditory and Optical Systems”**

**Monday, April 28, 2008**

**Demonstrations/Reception 10:00 – 11:00 am**

**Lecture: 11:00 – 12:00 noon**

**Lory Student Center Room 230**

## **ABSTRACT**

In this presentation, Dr. Starkweather will cover the work he has been doing which enables the deaf and severely hearing impaired to hear and newer work which strives to give blind people rudimentary vision for increased mobility. This presentation will delve into the history of cochlear implants and the subjects that can benefit from this technology. Details of a system of audio input, gain control, filters, and audio to electrical mapping will be presented. This will then be extended to current work which involves stimulation of the optic nerve through an electrode array attached to the retina. The talk will include discussion of the patient fitting system, digital signal processing, telemetry system, and implant operation. For one hour prior to the talk, a demonstration of actual hardware and firmware operation will be presented.

## **SPEAKER BIOGRAPHY**

Dr. Tim Starkweather (<http://www.2-sight.com>; [tstarkweather@2-sight.com](mailto:tstarkweather@2-sight.com)) graduated from Colorado State University in January of 1993. Since that time, he has been involved in software, firmware and system design for a variety of implantable medical devices that include Pacemakers, Implantable Defibrillators, Implantable Insulin Pumps with patient telemetry control combined with long-term implantable glucose sensors, Cochlear Implants and, currently, a visual prosthesis for individuals who have lost their sight in adulthood.

**For more information**, please contact MaryAnn Stroub at (970) 491-2708 or [mstroub@engr.colostate.edu](mailto:mstroub@engr.colostate.edu)

**ISTeC (Information Science and Technology Center)** is a university-wide organization for promoting, facilitating, and enhancing CSU's research, education, and outreach activities pertaining to the design and innovative application of computer, communication, and information systems. For more information please see [ISTeC.ColoState.edu](http://ISTeC.ColoState.edu).